been reversed, the entire contents of the gas chamber (which now becomes a waste gas chamber) must likewise go into the chimney. If one awaits the emptying out of the gas chamber, and then only reverses the air, so all must go smoothly; if one reverses the air flapper earlier, so must gas and air meet together in the chimney flue, and if now here the ignition temperature is present, so will the gas burn forthwith and also still all go well. If, however, the chimney flue is cooler, or by suddenly in-streaming large quantities of air, the gas temperature becomes lowered below the ignition point, an explosible mixture is able to result, and this must ignite explosively if it is brought into contact with an incandescent wall surface, or if an incandescent particle of dust is sucked from the furnace into it. The means for prevention of explosions consist, above all, in cutting off the supply of gas and air to the furnace during the reversals, and this method of proceeding is nowadays already met with in probably all furnaces on economical grounds, as otherwise gas is sucked out by the chimney in relatively considerable amounts and is uselessly allowed to escape into the atmosphere. A further means is the pausing for a specified time between the reversal of the gas and that of the air, which is easily carried out with the simple Siemens flappers. These have, however, the disadvantage in working, of easily becoming leaky, and .then they are the cause of considerable losses of gas, but very difficult of perception. Therefore, one has frequently adopted other devices, for example, mushroom valves, and these are most frequently so arranged, that gas and air are simultaneously reversed. Also hereby explosions can be avoided, if the chimney flue is throughout heated above the ignition temperature of the gas, and one has, therefore), only to take care that on reversal no great amount of cold air from outside is able to be sucked in, which in eventual denial of water seals can easily occur, and, as before-mentioned, brings about sudden cooling. But if one for the purpose of obtaining smaller heat losses should therefore turn to employing lower regenerator chamber temperatures, so will attention be directed to the possibility of the origination of explosible mixtures, and one will, perhaps, again meet with the arrangement, that gas and air be separately reversed.